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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,155

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EXAMINER

MILLER, DANIEL H

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

09/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,155	Applicant(s) KUBOTA ET AL.	
	Examiner DANIEL MILLER	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/9/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-27 of copending Application No. 11/822,484. Although the conflicting claims are not identical, they are not patentably distinct from each other because they encompass the same base limitations and composition minus references to shape and intended use language not indicative of patentability.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-29 of copending Application No. 10/530,717. Although the conflicting claims are not identical, they are not patentably distinct from each other because they encompass the same base limitations and composition minus references to shape and intended use language not indicative of patentability.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greinke (US 6,746,768) in view of Olstowski (US 3,423,496).

2. Greinke teaches an expanded graphite sheet comprising graphite natural graphite flakes subject to an intercalating agent (column 5 line 55-65). The intercalating agent is a mixture including inorganic acid and other oxidizing agents; where in the intercalating agent can be in an exemplary embodiment 10 to about 50 pph per 100 parts graphite flakes (column 6 line 27-33). This is considered an overlapping range with applicants claimed range. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).
3. The oxidizing agent can include an organic acid and a strong oxidizing agent mixed into said acid (see column 6 line 5-10).
4. Olstowski teaches a graphite structure (such as a gasket; column 1 line 20-25) formed from expanded natural graphite comprising oxygen-containing organic liquids including acids, esters (column 1 line 65-72), and organophosphates (column 2 line 1). Organophosphates are esters of phosphoric acid (See Wikipedia) and have organic phosphoric acid moieties.
5. Since Greinke teaches the use of organic acid and other oxidizing agents in intercalating material for natural graphite and Olstowski teaches the use of organic liquids comprising acids, esters and organophosphates in intercalating material for natural graphite, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use phosphorous compounds including esters thereof given their known inclusion as intercalating solutions in the art.

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6. The reference, discussed above, is silent as to the claimed structures of claims 3-7.

7. Further, it would also have been obvious to a person of ordinary skill in the art at the time of the invention to use phosphorous compounds, including those claimed in applicant's claims 3-7, because all organophosphates are taught by Olstowski to be capable of use as part of an intercalating solution. Therefore, absent a showing of criticality or unexpected results with respect to the claimed compositions it would be expected based on the broadly taught and used compounds available as oxidation agents in the intercalation process that any organophosphate would be appropriate for use in the current invention including those claimed by applicant. It would have been obvious to a person of ordinary skill in the art to vary an oxidative protective $-R$, $-OH$, or $-H$ groups and still get a phosphoric acid or ester with protective and expansive properties at high temperatures. No patentable distinction is seen.

2. The graphite flakes of Greinke are heated until they expand between about 80 and 1000 times their original volume. Then said expanded graphite is compressed and roll pressed into graphite sheets (column 7 line 45-65).

8. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greinke (US 6,746,768) in view of Olstowski (US 3,423,496).

9. As evidenced by EP 0824134 A1.

10. Greinke teaches an expanded graphite sheet comprising graphite natural graphite flakes subject to an intercalating agent (column 5 line 55-65). The intercalating agent is a mixture including inorganic acid and other oxidizing agents; where in the intercalating agent can be in an exemplary embodiment 10 to about 50 pph per 100 parts graphite flakes (column 6 line 27-33). This is considered an overlapping range with applicants claimed range. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

11. The oxidizing agent can include an organic acid and a strong oxidizing agent mixed into said acid (see column 6 line 5-10).

12. Olstowski teaches a graphite structure (such as a gasket; column 1 line 20-25) formed from expanded natural graphite comprising oxygen-containing organic liquids including acids, esters (column 1 line 65-72), and organophosphates (column 2 line 1). Organophosphates are esters of phosphoric acid (See Wikipedia) and have organic phosphoric acid moieties.

13. Since Greinke teaches the use of organic acid and other oxidizing agents in intercalating material for natural graphite and Olstowski teaches the use of organic liquids comprising acids, esters and organophosphates in intercalating material for natural graphite. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use phosphorous compounds including esters thereof given there known inclusion as intercalating solutions in the art.

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14. The reference, discussed above, is silent as to the claimed structures of claims 3-7.

15. Further, it would also have been obvious to a person of ordinary skill in the art at the time of the invention to use phosphorous compounds, including those claimed in applicant's claims 3-7, because all organophosphates are taught by Olstowski to be capable of use as part of an intercalating solution. Therefore, absent a showing of criticality or unexpected results with respect to the claimed compositions it would be expected based on the broadly taught and used compounds available as oxidation agents in the intercalation process that any organophosphate would be appropriate for use in the current invention including those claimed by applicant. It would have been obvious to a person of ordinary skill in the art to vary an oxidative protective $-R$, $-OH$, or $-H$ groups and still get a phosphoric acid or ester with protective and expansive properties at high temperatures. No patentable distinction is seen.

16. The graphite flakes of Greinke are heated until they expand between about 80 and 1000 times their original volume. Then said expanded graphite is compressed and roll pressed into graphite sheets (column 7 line 45-65).

17. Also see EP 0824134 A1 as evidence of a wide variety of identical to substantially similar intercalation compounds added for fire retarding and known in the art to be suitable for intercalating graphite material to make it fire retardant or otherwise resistant to higher temperatures (see figures and claim 8). In which case EP '134 notes that it is not limited to the cited examples but can be any water insoluble phosphorous

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compounds (see page 4); which would include substantially similar compounds such as those claimed by applicant.

18. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over von Bonin reference (US 5,382,387) in view of EP 0824134 A1.

19. The von Bonin reference (US 5,382,387) teaches a graphite material having phosphate (additional binders) and ortho-phosphoric acid (Col. 1, Lines 45-52 and column 2, Lines 45-54), and discloses the wt. % of the expanded graphite being 100-5% by weight (Col. 2, Lines 16-20). Note that because the wt. % of the graphite is. 100-5%~ the wt % of the phosphorus compound will be 0-95%.

20. The graphite can be expandable or pre-expanded graphite (Column 2 lines 5-20) expanded or expandable to 50 to 600 times its volume (column 1 lines 10-15).

21. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide an organic phosphorus compound and make the heat-resistant material contain 0.1 to 10.0 wt. % of said organic phosphorus compound and 90.0 to 99.9 wt. % of said expanded graphite in order to provide good binder properties (von Bonin, Col. 1, Lines 55-57).

22. The reference, discussed above, is silent as to the claimed structures of claims 8-12.

23. EP 0824134 A1 teaches a wide variety of identical to substantially similar intercalation compounds added for fire retarding and known in the art to be suitable for intercalating graphite material to make it fire retardant or otherwise resistant to higher temperatures (see figures and claim 8). In which case EP '134 notes that it is not limited to the cited examples but can be any water insoluble phosphorous compounds (see page 4); which would include substantially similar compounds such as those claimed by applicant.

24. It would also have been obvious to a person of ordinary skill in the art at the time of the invention to use phosphorous compounds, including those claimed in applicant's claims 8-12, because a large majority of organic phosphates are taught by von Bonin and EP '134, and known to one of ordinary skill, to be capable of use as part of and in addition to an intercalating solution; wherein the phosphates add to the mechanical stability and long term durability when employed in moulds in temperatures above 450 degrees C (see von Bonin column 1 lines 25-40). Therefore, absent a showing of criticality or unexpected results with respect to the claimed compositions it would be expected based on the broadly taught and used compounds available as oxidation agents in the intercalation process that any organic phosphate would be appropriate for use in the current invention including those claimed by applicant. It would have been obvious to a person of ordinary skill in the art to vary an oxidative protective -R, -OH, or -H groups and still achieve a phosphoric acid or ester with protective and expansive properties at high temperatures as claimed. No patentable distinction is seen.

Response to Arguments

3. Applicant's arguments filed 6/9/2008 have been fully considered but they are not persuasive.

4. The double patenting rejections have been maintained since applicant has chosen not to address those rejections substantively.

5. Regarding claims 1-7, the examiner contends that it would also have been obvious to a person of ordinary skill in the art at the time of the invention to use phosphorous compounds, including those claimed in applicant's claims 3-7, because all organophosphates are taught by Olstowski to be capable of use as part of an intercalating solution. Therefore, absent a showing of criticality or unexpected results with respect to the claimed compositions it would be expected based on the broadly taught and used compounds available as oxidation agents in the intercalation process that any organophosphate would be appropriate for use in the current invention including those claimed by applicant. It would have been obvious to a person of ordinary skill in the art to vary an oxidative protective -R, -OH, or -H groups and still get a phosphoric acid or ester with protective and expansive properties at high temperatures. No patentable distinction is seen.

6. Further regarding claims 1-7 previously presented, see EP 0824134 A1 as additional evidence of what is known to one of ordinary skill regarding adding phosphates to graphite in high temperature applications. EP 0824134 A1 teaches a wide variety of identical to substantially similar intercalation compounds added for fire

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retarding and known in the art to be suitable for treating graphite material to make it fire retardant or otherwise resistant to higher temperatures (see figures and claim 8). In which case EP '134 notes that it is not limited to the cited examples but can be any water insoluble phosphorous compounds (see page 4); which would include substantially similar compounds such as those claimed by applicant.

7. Regarding applicant's comments on page 12 of remarks of 5/14/2008 it appears applicant is confused as to terminology. Expanded graphite is a natural graphite that has been subject to an intercalation and heating process and both Greinke and Olstowski are teaching the same and/or substantially similar graphitic material (see both references generally). Applicant has otherwise made a lot of conclusory statements without substantive argument that have been found unpersuasive.

8. Rejection maintained.

9. A new set of rejections have been asserted against newly added claims 8-12.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MILLER whose telephone number is (571)272-1534. The examiner can normally be reached on M-FTh.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks be reached on (571)272-14011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Miller

/KEITH D. HENDRICKS/

Supervisory Patent Examiner, Art Unit 1794